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Before the
Federal Communications Commission
Washington, D.C. 20554

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In the Matter of

TV Auxiliary Use of Vacant
UHF-TV Channels.

RM-7568

MEMORANDUM OPINION AND ORDER

Adopted: March 29, 1995;

Released: May 1, 1995

By the Commission:

INTRODUCTION

1. This *Memorandum Opinion and Order* is in response to a petition for rule making, RM-7568 submitted by the National Association of Broadcasters ("NAB"), and responsive comments.¹ NAB proposes amendments to our rules concerning the use of vacant UHF-TV channels for television auxiliary services. For the reasons stated below we deny the NAB petition for rulemaking.

2. Currently, rule Section 74.602(i) allows TV studio-transmitter-link (STL) and TV relay facilities² to operate on UHF-TV channels 14-69 on a secondary non-interference basis, provided they meet certain interference protection provisions under Subpart G of Part 74 of our rules.³ 47 C.F.R. § 74.602. However, the rules do not explicitly specify operational parameters for STL or relay stations transmitting on these channels.

THE PETITION

3. NAB expresses concern about potential interference to regularly authorized television service by broadcast auxiliary stations, and the potential use of these stations to extend the reception area of associated low power TV stations. It therefore requests that the Commission adopt new rules requiring the filing of an interference analysis

with applications for STL's and TV relay stations, and requiring such licensees to employ scrambling techniques so that their signals would be incompatible with consumer television receivers.⁴ Pending such action in a rulemaking proceeding, NAB requests that the Commission freeze its acceptance of all auxiliary applications filed pursuant to rule Section 74.602(i).⁵

COMMENTS

4. The comments of WSBT-TV, MSTV, and Mr. Larry H. Will are generally supportive of NAB's petition. Mr. Will further suggests that licensees of these facilities should be required to take further steps to prevent reception of the auxiliary link by the public by employing very narrow beamwidth antennas and minimum necessary power.

5. CBA agrees that abuse of the UHF STL rule should be prevented, but urges the Commission to avoid creating undue burdens for STL applicants by requiring the submission of expensive interference studies. As an alternative, CBA suggests that if the Commission finds that an applicant's parameters indicate potential interference, the applicant should be afforded an opportunity to make a showing that interference will not occur in actual operation. CBA also asserts that mandatory encryption of STL signals would impose an unwarranted cost burden on economically marginal stations. Finally, CBA claims that the Commission is already carefully scrutinizing applications for STL facilities on UHF-TV channels and questions the merit of the measures sought by NAB in its petition.

6. In its reply comments, NAB asserts that it does not wish to impose unnecessary burdens on LPTV stations, or on any other service. However, NAB maintains that requiring Section 74.602(i) applicants to provide a technical showing that clearly demonstrates compliance with the interference protection criteria of Subpart G will ensure that such auxiliary facilities are carefully designed to avoid potential interference to other existing services.

DISCUSSION

7. STL's and TV relay stations are not intended for reception by the general public (as distinguished from the low power TV, TV translator and TV booster facilities authorized by Subpart G of Part 74 of our rules). All

¹ See *Public Notice*, Report No. 1833, January 14, 1991, RM No. 7568. The Commission received comments from the Community Broadcasters Association ("CBA"), a trade association whose members are licensees of low power television stations; WSBT Inc., licensee of WSBT-TV, Channel 22, South Bend, Indiana; the Association of Maximum Service Television, Inc. ("MSTV"), a trade association representing over 250 television stations; and, Larry H. Will, P.E., an area frequency coordinator for broadcast auxiliary stations.

² See rule Section 74.601(b)&(c) for definitions of TV STL's (studio-transmitter-link) and TV relay stations. 47 C.F.R. § 74.601. An STL is a fixed station used to transmit program material and related communications between a studio and transmitter of a broadcast station. A TV relay is characteristically used for transmission of program material and related communications, such as intercity relay between broadcast stations for use by broadcast stations. In essence, both facilities are radio links used between two fixed points whose primary purpose is to carry program material.

³ For instance, see rule Sections 74.705, 74.707, and 74.709

under Subpart G for interference protection criteria for TV broadcast stations; low power TV and TV translator stations; and land mobile stations, respectively. 47 C.F.R. §§ 74.705, 74.707, 74.709.

⁴ NAB notes that to make another proposed secondary signal incompatible with consumer television receivers, scrambling was considered in a *Further Notice of Proposed Rule Making* in MM Docket No. 85-36, 2 FCC Rcd, page 3129 (1987). That Notice proposed to extend the sharing of UHF-TV channels to portable broadcast auxiliary TV pickup stations (including e.g., the use of wireless cameras) on a secondary non-interference basis. Subsequently, in light of limited industry support, no rules were adopted and the proceeding was terminated without prejudice in *Order* in MM Docket No. 85-36, 7 FCC Rcd 490 (1992).

⁵ In seeking the freeze, NAB requests waiver of the procedural rules contained in rule Section 1.44(e) to allow for the joint submission of these "consolidated and closely related" matters for Commission action. As NAB's petition for rulemaking is denied, its waiver and freeze requests are dismissed as moot.

licensees operating in this manner are advised to provide a narrow beam, point-to-point signal path. While it is theoretically possible for STL or relay facilities operating on UHF-TV channels to provide direct service to the public, we are not aware that this is occurring, either intentionally or inadvertently, and neither NAB nor any commenters provided any evidence of or information indicating such occurrences. Moreover, should unintended reception of relayed signals occur, the extent would be very limited, given the operational parameters that we have found appropriate to authorize for STL and relay facilities. However, appropriate administrative action will be taken with regard to specific cases of misuse brought to the attention of the Commission.

8. In its petition, NAB submitted an illustration of the problem describing an LPTV station's actual application for use of a UHF-TV channel for STL operation. However, because that application did not meet the protection requirements of Sections 74.705(b)(4) and (5), it was not granted. Thus, NAB's example demonstrates that existing protections in our rules can address this issue.

9. CBA is correct that the Commission currently examines closely UHF-TV STL applications. Transmitter power and antenna radiation patterns are being given close scrutiny in the application review process. For example, while Section 74.636, which governs power limitations, does not explicitly include the UHF-TV channels in its list of frequency bands for television auxiliary services, it does limit such facilities' transmitter peak output power on all listed frequency bands to "not be greater than necessary." Thus, maximum transmitter output powers greater than 20 watts are not authorized without sufficient justification. (See 47 C.F.R. § 74.636.)

10. Similarly, Section 74.641 has been followed carefully in processing UHF-TV band STL and relay station applications. Section 74.641 specifies maximum radiation pattern beamwidths for the various microwave frequency bands,⁶ but not for the UHF bands. In processing UHF STL applications, the staff has and will generally continue to consider an antenna beamwidth of 25 degrees as a reasonable attainable performance with commonly available antennas, and therefore use it as our guideline for questioning applicants concerning use of minimum necessary power.⁷ The comments of Larry H. Will also support this contention. Mr. Will observes that while it is very difficult to construct narrow beamwidth antennas at UHF frequencies, it is possible to attain 3 dB beamwidths of less than 30 degrees.⁸

11. As a matter of policy, the Commission has been utilizing the power and antenna rules described above in determining compliance with Section 74.636 while processing applications for STL and relay facilities on UHF-TV channels. Therefore, we do not agree with NAB that rule amendments to specify transmitter power and antenna beamwidth limits are necessary. Applicants requesting a power output in excess of 20 watts or a transmitting antenna beamwidth in excess of 25 degrees (measured at the

-3 dB points) are asked to submit an engineering analysis demonstrating why the higher output power or wider beamwidth is necessary.

12. On the basis of our experience in processing these applications, we believe that the current provisions of Section 74.602(i), which restricts TV STL's and relay stations on UHF-TV channels to secondary non-interfering status, adequately guard against interference. This section also requires these facilities to comply with provisions of Subpart G of the rules. Thus, such STL's and relay facilities must meet the protections criteria, as outlined in Sections 74.705, 74.707, and 74.709 of Subpart G, for the primary licensees of the UHF-TV spectrum, that is, TV stations, LPTV's and TV translators, and land mobile stations. Therefore, the primary services are sufficiently protected from interference under Section 74.602(i).

CONCLUSION

13. In view of these existing constraints on objectionable interference and service abuses, we believe that imposing a scrambling requirement, as suggested by NAB, on UHF-TV STL facilities at this time is unnecessary and would represent an unwarranted cost burden on economically marginal stations.

14. Moreover, current rules provide the Commission appropriate control to resolve any cases of inappropriate use or interference should they occur. We note that in cases where the rules in Part 74 do not cover all phases of operation, Section 74.28 permits the Commission to make supplemental orders in each case as deemed necessary.

15. Accordingly, IT IS ORDERED THAT, pursuant to 47 U.S.C. Sections 154 and 303, NAB's petition for rule making to amend Section 74.602(i) and request for a freeze on accepting applications submitted pursuant to Section 74.602(i), ARE DENIED.

16. Further information may be obtained from Bernard Gorden, Mass Media Bureau, Engineering Policy Branch, (202) 418-2190.

FEDERAL COMMUNICATIONS COMMISSION

William F. Caton

William F. Caton
Acting Secretary

⁶ For 1,990 to 2,110 MHz, the microwave auxiliary band closest to the UHF-TV band, Section 74.641 permits a maximum beamwidth of five degrees. 47 C.F.R. § 74.641

⁷ It is difficult to achieve the very narrow microwave beamwidths in the UHF spectrum. Larger beamwidth antennas, in turn, generally have less main lobe power gain and therefore

require more transmitter power to achieve a desired effective radiated power.

⁸ For example, Mr. Will indicates that a 6 foot diameter grid parabolic antenna has a beamwidth of less than 30 degrees at channel 14 and less than 13 degrees at channel 69.